



Task Force on Indigenous Peoples' Food Systems and Nutrition

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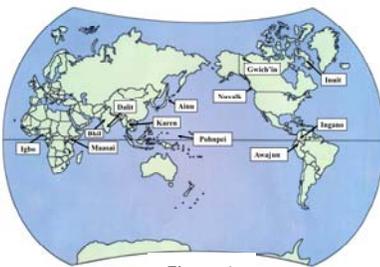


Figure 1

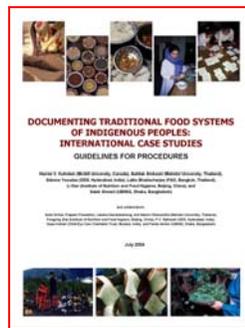


Figure 2

Case Studies

Our program has the overall goal to gather a spectrum of data from 12 deliberately diverse case studies of Indigenous Peoples (IP) in different parts of the world. We document the inherent strengths of traditional food systems, the circumstances of the nutrition transition in indigenous communities, and provide evidence that local resources are critical for food security, nutrition and health. We aim to address scientific and public health issues to influence local, national and international policies for protection of IP land and food resources. Case studies in the program are Awajun (Peru), Ainu (Japan), Baffin Inuit (Canada), Bhil (India), Dalit (India), Gwich'in (Canada), Igbo (Nigeria), Ingano (Colombia), Karen (Thailand), Maasai (Kenya), Nuxalk (Canada), and Pohnpei (Federated States of Micronesia) (Fig. 1). In-country academic partners and IP communities collaborate with CINE for research in 2 phases: 1) documentation of the food system with a defined protocol (<http://www.mcgill.ca/cine/research/global/>) (Fig. 2) and 2) implementation of health promotion interventions using culturally sensitive and environmentally relevant elements of

local food systems. The team meets once a year (Fig. 3). All case studies have completed Phase 1. An impressive array of food species and varieties were documented, some of which still require



Figure 3. 2007 Meeting- Bellagio, Italy

scientific identifications and nutrient composition analysis. Locally available food species numbers varied considerably depending on ecosystem. The Maasai of Kenya documented 35 food species in an arid, drought prone zone. There were 250 local food species documented for the Pohnpei culture in the Federated States of Micronesia; however when unique varieties of food species were considered, the number increased to 381. Other preliminary results showed 220 species in the Igbo environment in West Africa, 223 for the Amazonian Awajun and 387 for Karen. Data on the food systems were prepared and presented on the CINE website: <http://www.mcgill.ca/cine/resources/data/>.

The extent of use of these impressive food systems varied (Table 1). For example, the Awajun and Igbo consumed close to 100% of dietary energy from these local food resources. The Karen, Pohnpei and Dalit cultures had considerable erosion of dietary energy supplanting traditional species in the form of commercial (or donated) white refined rice.

Table 1. Percentage of Adult Dietary Energy as Traditional Food and Number of Species/varieties in the Food Systems

Indigenous Group	% Energy	N of Species/varieties
Awajun	93	223
Bhil	59	95
Dalit	43	329
Gwich'in	33	50
Igbo	96	220
Ingano	47	160
Inuit	41	79
Karen	85	387
Maasai	6	35
Nuxalk	30	67
Pohnpei	27	381



Awajun

Bhil

Dalit

Gwich'in

Pohnpei

Inuit

The Canadian Gwich'in, Inuit and Nuxalk had less than 40% of dietary energy as traditional, local food, with the majority of the balance of energy derived from refined flour, fats and sugar. Contribution of these local food systems in contrast to commercialized foods is being computed for several key nutrients.

In addition to documentation of species and varieties and the % of energy and nutrients from local vs commercial food items, the indigenous community case study researchers will document change in food sources (local vs commercial) and environmental quality using qualitative methods, physical activity, food security, process notes on intervention activity effectiveness, and correlations of increasing dietary nutrients with increasing food species diversity. All case studies have prepared chapters for a book to be published by FAO in Spring 2008.

Interventions to improve dietary intake and health by using elements of indigenous food systems have been completed for the Nuxalk and Dalit, and are now in progress with the Gwich'in, Inuit, Ingano, Awajun, Karen and Pohnpei. Unfortunately, funding applications have not been successful for the Bhil, Maasai and Igbo intervention programs. Recent publications highlight intervention activities that have found resonance with indigenous communities and strategies for their evaluation and definitions of IP in the international context.

The Centre for Indigenous Peoples' Nutrition and Environment (CINE)

CINE (<http://www.mcgill.ca/cine>) is a multidisciplinary research and education resource established in 1992 by Canada's Aboriginal leaders and McGill University. CINE was created in response to a need for participatory research and education to address concerns about the integrity of IP traditional food systems resulting from recognition that environmental deterioration has adverse impacts on health and lifestyles of rural-dwelling IP, in particular nutrition as affected by food and food traditions. Four professors with academic appointments in the School of Dietetics and Human Nutrition form the backbone of the Centre's interdisciplinary activities, which involve more than 40 national and international collaborators. CINE is a unique Centre, not only within McGill, but nationally and internationally.

CINE has a Governing Board comprised primarily of aboriginal organization representatives and is chaired by Chief Bill Erasmus. Internationally recognized for its research and its model of participatory methods. CINE strives to advance understanding of benefits and risks of IPs' food systems and effects of both natural and human-generated environmental phenomena on health of IP (Fig. 4).



Figure 4.
Sims & Kuhnlein, 2003

Acknowledgments

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Key References from the Task Force

- Bartlett JG, L Madariaga-Vignudo, JD O'Neil and HV Kuhnlein (2007) Identifying Indigenous Peoples for health research in a global context: a review of perspectives and challenges. *Int. J. Circumpolar Health* 66(4):287-307.
- Englberger L, RBH Wills, L Dufficy, B Blades, JW Daniells and T Coyne (2006) Carotenoid content and flesh color of selected banana cultivars growing in Australia. *Food Nutr. Bull.* 27:281-291.
- Erasmus B and HV Kuhnlein (2005) Indigenous Peoples' food systems are affected by changing environment and culture. Proceedings: 18th International Congress of Nutrition. Nutrition Safari for Innovative Solutions, Durban, South Africa. *Ann. Nutr. Metab.* Basel: Karger.
- Damman S, WB Eide, and HV Kuhnlein (2007) Indigenous peoples' nutrition transition in a right to food perspective. *Food Policy* (in press, available online).
- Kuhnlein HV, O Receveur, R Soueida and PR Berti (2007) Unique patterns of dietary adequacy in three cultures of Canadian Arctic Indigenous Peoples. *Public Health Nutr.* (in press, available online).
- Kuhnlein HV, B Erasmus, H Creed-Kanashiro, L Englberger, C Okeke, N Turner, L Allen, L Bhattacharjee, et al. (2006) Indigenous Peoples' food systems for health: Finding interventions that work. *Public Health Nutr.* 9(8):1013-1019.
- Kuhnlein HV (2005) Goals of Indigenous Peoples' food systems research: Science, public health and policy. Proceedings: 18th International Congress of Nutrition. Nutrition Safari for Innovative Solutions, Durban, South Africa. *Ann. Nutr. Metab.* Basel: Karger.
- Okeke EC and C Zeze (2006) Traditional processing and nutrient cost of Igbo traditional vendor foods and recipes commonly eaten in Nsukka, Enugu State. *Agro-Science: Journal of Tropical Agriculture, Food, Environment and Extension.* 5(1): 36-44.
- Roche M, HM Creed-Kanashiro, I Tuesta and HV Kuhnlein (2007) Traditional food diversity predicts dietary quality for the Awajún in the Peruvian Amazon. *Public Health Nutr.* (in press, available online).
- Roche M, HM Creed-Kanashiro, I Tuesta and HV Kuhnlein (2007) Traditional food system provides dietary quality for the Awajún in the Peruvian Amazon. *Ecol. Food Nutr.* 46:377-399.
- Schmid MA, B Salomeyesudas, PV Satheesh, J Hanley and HV Kuhnlein (2007) Intervention with traditional food as a major source of energy, protein, iron, vitamin C and vitamin A for rural Dalit mothers and young children in Andhra Pradesh, South India. *Asia Pac. J. Clin. Nutr.* 16(1):84-93.
- Schmid MA, GM Egeland, B Salomeyesudas, PV Satheesh and HV Kuhnlein (2006) Traditional food consumption and nutritional status of Dalit mothers in rural Andhra Pradesh, South India. *Eur. J. Clin. Nutr.* 60(11):1277-1283.
- Sims J and HV Kuhnlein (2003) *Indigenous Peoples Participatory Health Research. Planning and Management. Preparing Research Agreements.* Geneva: World Health Organization. 35 pp. http://www.who.int/ethics/indigenous_peoples/en/index1.html.

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Nuxalk

Igbo

Karen

Ingano

Maasai

Ainu